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A similar place of offering is on a trail which leads up the ridge between Djictañadiñ and Xaslindiñ creeks on the east side of Trinity river. This place has not been seen by the writer, but a Hupa once told of misfortune coming upon an Indian who set the accumulated pile on fire.

In the Van Duzen region, occupied formerly by the Nongatl, resting places on ridges are mentioned in myths and tales. In one case offerings were left at a spring where one was expected to rest and drink. At another spring no offering was left. The narrator explained that the water of the first spring was originally bad and was purified by Coyote, the Nongatl culture hero. At the second spring no such deed was performed, therefore no offering was left. Such offerings are spoken of as "paying."

In one case a very definite origin was given of an offering place similar to the one between Hupa valley and Redwood creek mentioned above. While riding through the country of the Siñkyōne on the ridge between the drainage of Matole river and the South Fork of Eel river, Briceland Charlie, a Siñkyōne, pointed out this place and made the customary offering of a twig broken from a tree. The name given the place having excited curiosity, its etymology was sought. The name was said to mean "hands lie." The explanation given was that many years ago a war band of his tribe went to Briceland to avenge the death of some of its members upon the natives of that place. They killed a man and brought his hands and feet to this spot, where they buried them. The spot was said to have been chosen well within the territory of the victors. The prayer customary is the expression of a wish that such a fate may not overtake the traveler. This informant claims to know of other such places north in the Van Duzen country which he said had a similar origin. This conjecture of the Indian may be correct, but it must be borne in mind that the Hupa and probably the Nongatl were not in the habit of taking trophies from their enemies. The places of offering, however, may have survived the practice.

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DR MATTHEW ON WRIGHT'S ORIGIN AND ANTIQUITY OF MAN

I HAVE delayed answering Dr Matthew's strictures on my book in the October-December number, 1912, of *Current Anthropological Literature*, because it was intimated that other phases would be touched on by other reviewers in later numbers of the journal. But as the other reviews have not yet appeared, it is not well to neglect longer Dr Matthew's

serious charge that my "argument is throughout a prejudiced, and at times somewhat unscrupulous, presentation of such facts and opinions as may serve to support" my conclusions.

One of his charges is that I have not accepted the "planetesimal theory" of the formation of the solar system; but in this I am probably still in company with the great majority of leading astronomers and physicists of the world. Besides, the calculations of Sir George Darwin on which I have placed reliance are not dependent on any theory regarding the loss of heat by radiation from the solar system, but on the action of gravity in checking the diurnal revolution of the moon. However much of uncertainty he may later have admitted to enter into his data for calculation, it is certain that astronomers and physicists do set some limitation to geological time. And those who have set comparatively narrow limits are not of such a grade that their opinions can be lightly set aside.

To the charge that I have "ingeniously combined" the estimates of geological periods made by "Williams, Dana, Walcott and Upham" [he should also have added Wallace] so as to secure a minimum length for the Glacial period, it is proper to say that Walcott's conclusion amply justifies my inferences. His words are: "Geologic time is of great but not of indefinite duration. I believe that it can be measured by tens of millions but not by single millions, or hundreds of millions of years." His calculations led him to limit geologic time as shown in stratified deposits to between 25,000,000 and 70,000,000 years; while Wallace's calculations from the rate of the erosion of the earth's surface and the amount of deposition to produce the sedimentary strata of all the geologic ages are that not more than 30,000,000 years are required. No geologic facts have been brought forward which would indefinitely enlarge these calculations. Besides, no ingenious combination of theories is needed to give basis for my arguments for the recent date of the Glacial epoch. My estimates concerning the date and length of the Glacial epoch are based on abundant facts that cannot well be neglected by anyone who proposes to have an intelligent opinion on the subject.

I am glad to see that Dr Matthew agrees with me in discrediting the supposed evidence of Tertiary man. This is especially fortunate since it has been determined by the latest evidence that *Pithecanthropus* is certainly post-Tertiary. The argument for great antiquity of man, therefore, now depends on the evidence for a slow rate of biological development. And here we come to a subject in which much confusion of thought has arisen from a loose use of the word "species," a term

which I have aimed to avoid applying to the minor divisions of the human race, determined by minute anatomical peculiarities.

For example, while it is true that Lydekker says that the bones of *Pithecanthropus* "constitute a further link in the chain, bringing man nearer his simian prototype," he had said, just before, that they are human, and "are not held to represent what has been called the 'missing link' bridging over the gulf between man and the apes." Cope, also in speaking of *Pithecanthropus*, says that the "femur is long, straight, and entirely human." Later he says, "Until we learn the character of the lower jaw of the latter we shall be in doubt as to whether this individual pertains to the *Homo sapiens* or to the *Homo Neanderthalensis*." But in his final conclusions concerning *Homo Neanderthalensis* he had said that while we have in it "a greater number of simian characteristics than exist in any of the known races of the *Homo sapiens* . . . there is still, to use the language of Fraipont and Lohest, an 'abyss' between the man of Spy and the highest ape."

Now, it is evident that this "abyss" of Cope and this "gulf" of Lydekker represent about as large spaces as are generally allowed for species, and that the comparatively minute anatomical peculiarities are scarcely greater than those which characterize the different races of men at the present time. They are hardly worthy to be called specific characteristics, and Cope evidently hesitates to call the individuals "species," but generally speaks of them as "races" or "types," and in one case as "sub-species." In fact, the effort to bridge the "abyss" which separates *Homo sapiens* from the apes is not more successful than the attempt to bridge the St Lawrence by a single span. The argument from gradual approach is not effective to cover all distances. The spans of a bridge cannot be spread indefinitely; beyond a certain point they break down. This may be illustrated by the limitations which are set to the speed of trotting horses. The time of trotting a mile in 2.40 as it was fifty years ago has now been reduced to 2.04. But no one supposes it will ever be reduced to nothing, or indeed to half its original amount.

Just here I may be permitted to correct another false charge made by Dr Matthew against me, namely, that of misrepresenting Professor Sollas, in quoting him as authority for my conclusion that "the differences between the Heidelberg jaw and that of living races are slight and do not warrant specific distinction." This is false. I simply quote Sollas' statement concerning the dentition which he says is "in some respects less simian than that which can sometimes be observed in existing primitive races, such as the Australians."

Finally, what Dr Matthew says about my crediting the evidences for Pleistocene man on the Pacific coast well proves the statement, which I have somewhere made, that the devotees of physical science at the present time, as a class, are incapable of appreciating the weight of ordinary evidence in proof of individual facts. Dr Matthew thinks that Mr Sinclair has disproved or made doubtful every one "of the long list of alleged discoveries of human remains under the lava beds of the Pacific coast." Mr Sinclair has, indeed, as I freely admit, proven that the Calaveras skull which Whitney brought to Cambridge could not have come from the place from which Whitney thought it did. But I have elsewhere shown from information which I personally gathered on the spot how a mistake could easily arise in the substitution of the wrong skull without any intention to deceive. The evidence still stands that Matison found and brought to Mr Scribner a skull from the place designated.

As to the evidence for the many other similar discoveries, it is not true that Mr Sinclair has disproved any of them, or brought evidence to throw reasonable doubt over any of them. He merely *surmises* that Clarence King might not have observed the facts with sufficient care to form a trustworthy opinion of the position of the object which he took with his own hands from the gravel beneath Table mountain. Mr Sinclair disbelieves the evidence which Mr Becker collected concerning the relics found in the shaft at Rawhide gulch, largely because the mortar of andesite and the spearheads of obsidian are of material which is found in pre-volcanic gravels, overlooking the possibility of their having been carried thither by commerce; whereas we have found bushels of obsidian implements in a single mound in Ohio which must have been brought in prehistoric times from the far distant Rocky Mountains.

As to the evidence for the McTarnahan mortar, which I carefully obtained twenty years ago, all that Mr Sinclair can find to throw doubt over it is that Mr McTarnahan's brother says it was found by them "back of the lagging during the work of retimbering." But there was no motive for anyone to have carried it in there 700 feet from the outside.

I may also add a word about the Nampa figurine. The evidence that this came from 300 feet beneath fluvial deposits, covered by a few feet of lava, in the Snake River valley, Idaho, was first collected by Mr Charles Francis Adams and several of his associates while on the spot a few days after its discovery. A better jury for testing evidence could not be found, and they knew all the persons in any way connected with the discovery. Furthermore a great amount of internal evidence sup-

porting the external evidence has been presented, while there was nothing to discredit the evidence but some supposed general conditions which on examination proved to be of no positive weight. Indeed no one has had the hardihood to dispute the evidence on anything but theoretical grounds. If Dr Matthew had familiarized himself with all the evidence concerning remains of man beneath the lava deposits on the Pacific coast, and not trusted to the criticisms of a single critic writing many years after and depending wholly on general considerations, he could not have written as he has in his criticism of my position on the subject.

One more word: The cause of variations in animals and plants is still as profound a mystery to scientific men as it has ever been. To suppose that chance variations have furnished the ground for natural selection leading up to the marvelous organizations which we find in both plants and animals involves a mathematical absurdity. Design must be reckoned with in some shape. The manner in which we think it to enter will be determined largely by one's philosophy concerning ultimate things. "Sports" occur in nature. My own statement is that to Science, man, while genetically connected with the lower species, appeared as a "sport," and that as yet there is no sufficient evidence that he attained his present superiority by infinitesimal degrees. When Dr Matthew finds the evidence for which he hopes in central Asia we shall all be glad to consider it.

But space forbids reference to several other points in which Dr Matthew's criticisms are unjust. I close by simply saying that in Dr Matthew's slurring reference to my knowledge and use of early Biblical documents as contributing something to the solution of the problem of the early distribution of the human race, he betrays his own ignorance of the present state of Biblical criticism. The theories by which the antiquity of those documents were challenged twenty-five years ago in Germany are now discredited and are being rapidly abandoned in the country from which they emanated. But this is not the place in which to present the evidence of this fact. G. FREDERICK WRIGHT

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THE "RED-PAINT PEOPLE"

It has ever been a failing of some archeologists, both here and abroad, to attribute great age to any form of burial or aboriginal objects the origin of which was not apparent. For this reason many graves discovered on the coast of Maine have been considered the work of a mysterious people whom "for want of a better name we have designated the 'Red-paint People.'"¹ The name has been applied on account of the large amount of red hematite (red oxide of iron, Fe_2O_3) found in